E-Flo® DC

Dual Control Electric Circulating Pumps

PROVEN QUALITY. LEADING TECHNOLOGY.

Constant pressure when you want it. Constant flow when you need it.

Single Pump. Dual Control.

E-Flo DC

Get the benefits of a pneumatic motor with the energy efficiency of an electric drive unit!

Our new Dual Control (DC) E-Flo pumps allow the pump to operate two different ways – constant pressure or constant flow rate.

Make the Switch to Savings!

Tap into the energy savings and advanced features of an electric pump. It's easier than you think to make the switch.

Save Energy

5x More Efficient

Electric motor means big savings when compared to similar-sized pneumatic motors – helping lower your energy bill and saving you money.

Outperform

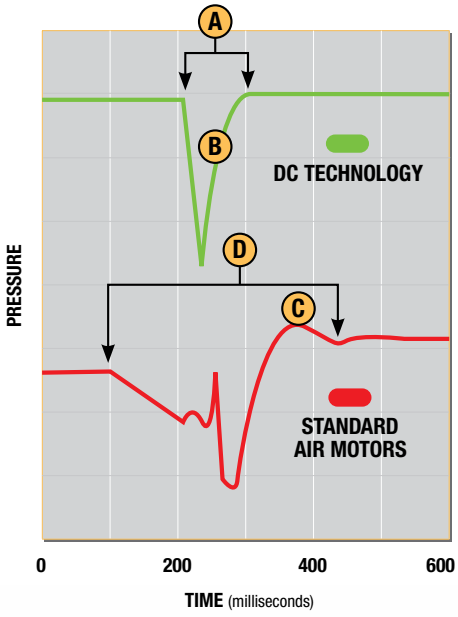
Gain More Control

Advanced Control Module allows you to easily integrate the pump into a PLC network for even greater control and visibility.

Improve Quality

Dual Control (DC) technology gives you less pulsation and smooth, rapid changeovers – for better, more consistent finishes.

Changeover Comparison



- **A** Less than 0.09 second changeover
- **B** Quick changeover and recovery with less pulsation
- **C** Pressure spike at changeover
- **D** Longer changeover causing pulsation

Improve Productivity

Spend Less Time Training

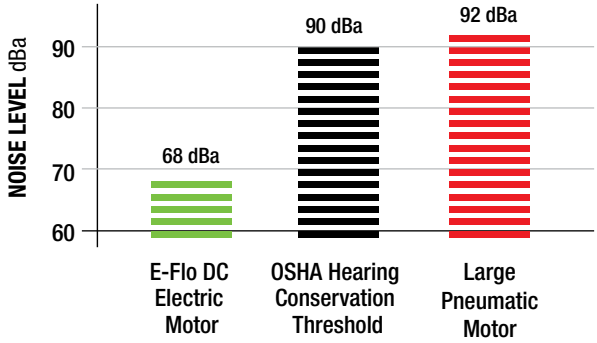
Electric pump functionality, with the simplicity of a pneumatic pump, makes it easy for anyone to operate.

Stay Up and Running Longer

Increased reliability means you'll spend less time maintaining and more time up and running.

Better Working Environment

Quiet electric motor means happier operators and better results. Exceeds OSHA sound regulations and **over 20 dbA's quieter** compared to similar-sized pneumatic motors.



Note: All pressures 100 psi

Boost Your Profits

Prevent Material Loss

Integrated runaway protection protects your pump from premature wear and prevents costly material loss.

Eliminate Costly Rework

Electric motor eliminates icing – giving you smoother pump operation and better finished product.

Lower Cost of Ownership

Use less energy and spend less on maintenance costs with the field-proven reliability of Graco's 4-ball pump.

Made in the USA

Boost Your Bottom Line

with Energy Savings and Advanced Pump Control

Advanced Motor with Control Module

Efficient and smart, the E-Flo DC with Advanced Control Module gives you additional control of pump performance and allows you to manage several pumps from a single module.

Multiple Pump Networking

Control several pumps from a single control module

Simple to Install

Basic installation requires only a single-phase *110/220 V, 50/60 Hz power

No VFD's Required.

** 110 V power available with 1HP motor only.*

Control Module

- Integrate the pump easily into a PLC Network for better visibility and control outside of the hazardous area
- Configure different operating profiles of pump
- Mount directly on pump motor or remotely on nearby wall
- Up to two pressure transducers can be added for greater control
- Connect pneumatic BPR controller to automate an “off-production” profile for even greater energy savings
- Password protect pump settings to protect against unauthorized access

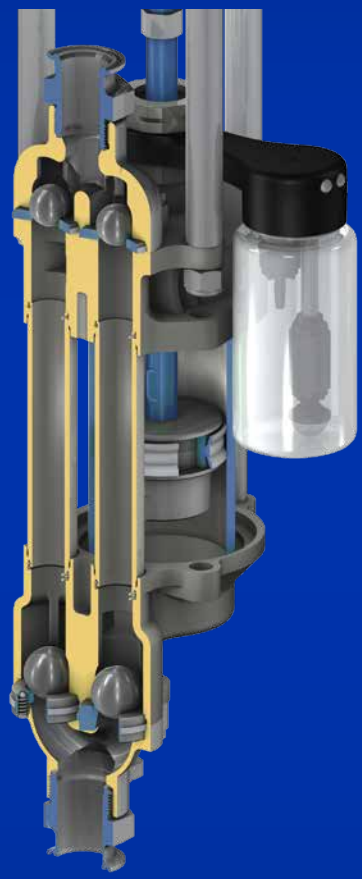
Basic Motor

Operator-friendly control knobs have clear symbols making it easy to adjust pump settings. Gives you local control at the pump and runaway protection.

4-Ball Lower

Graco is making it easier to install, upgrade and maintain your 4-ball pump.

Not only can our lowers be used with pneumatic, hydraulic or electric platforms, many models have common components – making it easier to upgrade existing equipment and stock replacement parts.



Enclosed Wet Cup

Maintain consistent lubrication for packings, reducing maintenance time.

Spring Loaded Packings

Increases the life of throat packings

Consistent torque – no operator needed to make adjustments

Improved Coating Options

Standard Chromex™ Rods for added durability

Available MaxLife™ Cylinders for maximum abrasion and wear resistance

Choose the Right Pump for You!

How to Select Your E-Flo DC

STEP 1 Pump Selections

Refer to the Pump Selection Table on the next page to answer the following questions:

Lower Size – Based on desired pressure and flow rates, what size lower is required? 750 cc, 1000 cc, 1500 cc or 2000 cc

Motor Size & Controls – What motor size and control type would you like on the motor? 1 or 2 hp, Basic or Advanced

Lower Fittings – What lower material and type of fitting is required on the lower? Hard Chrome/NPT, Hard Chrome/Tri-Clamp or MaxLife/Tri-Clamp

Mount – How would you like to mount the pump? Stand Mount, Wall Mount Bracket or None

Part Number Matrix

Electric	Circulation Pump	Lower Size	Motor Size, Controls & Type	Pump Type/Fittings	Mount
E	C	1 = 750 cc	1 = 1 hp Motor, Basic Controls, ATEX/FM/IECEx	1 = Hard Chrome, NPT	0 = No Stand
		2 = 1000 cc	2 = 1 hp Motor, Advanced Controls, ATEX/FM/IECEx	2 = Hard Chrome, Tri-Clamp	1 = Stand
		3 = 1500 cc	3 = 2 hp Motor, Basic Controls, ATEX/FM/IECEx	3 = MaxLife, Tri-Clamp	2 = Wall Mount Bracket
		4 = 2000 cc	4 = 2 hp Motor, Advanced Controls, ATEX/FM/IECEx		

STEP 2 Control Module & Cable

If **Basic** motor control is desired, your pump selection is complete. Refer to the Pump Selection Table on the next page for your part number.

If **Advanced** motor control is desired, determine the desired mounting location of the **Control Module**. The Control Module can be mounted directly on the pump or on a nearby wall. Select the appropriate CAN cable length.

NOTE: Up to 8 pumps can be controlled from a single Control Module. In this application, the pump electronics will be daisy-chained together via CAN cable. Select the appropriate CAN cable length.

Part Number	Description
24P822	Control Module Kit
16P911	3 ft (1 m) CAN Cable
16P912	25 ft (8 m) CAN Cable

STEP 3 Control Module Accessories

Part Number	Description	Comments
24R050	Pressure Transducer	Up to two pressure transducers can be connected to one Control Module. Cable length: 4.5 ft (1.4 m)
16V103	Transducer Extension Cable	For extending length of pressure transducer. Length: 6.5 ft (2 m)
24V001	Pneumatic BPR Control System	For use when implementing an “off-production” or “sleep” profile with the Control Module
16U729	Run/Stop Switch	Additional, separate switch for running and stopping the pump
16M172	50 ft (15 m) Fiber Optic Cable	Used for communicating outside of a hazardous area and networking multiple Control Modules together
16M173	100 ft (30 m) Fiber Optic Cable	Used for communicating outside of a hazardous area and networking multiple Control Modules together
24R086	Fiber/Serial Converter	For converting Fiber Optic Cable to RS232. Located outside of the hazardous area.
15V331	Ethernet IP Gateway Assembly	For interfacing with a PLC network. Located outside of the hazardous area.

Motors

Part Num.	Description
EM0011	1 hp Motor, Basic Controls, ATEX/FM/IECEx
EM0012	1 hp Motor, Advanced Controls, ATEX/FM/IECEx
EM0021	2 hp Motor, Basic Controls, ATEX/FM/IECEx
EM0022	2 hp Motor, Advanced Controls, ATEX/FM/IECEx

Accessories

Part Num.	Description
255143	Wall Mount Bracket
253692	Floor Stand
24R101	Basic Controls Securing Kit

Back Pressure Regulators

Part Num.	Description
288117	Pneumatic BPR (20 gpm, 300 psi max fluid pressure, 1-1/4 npt)
288311	Pneumatic BPR (20 gpm, 300 psi max fluid pressure, 1-1/2 npt)
288262	Pneumatic BPR (20 gpm, 300 psi max fluid pressure, 2 in Tri-Clamp)

E-Flo DC Pump Selection Table

Pump Specifications

Model	750	1000	1500	2000
Output per Cycle	750cc	1000cc	1500cc	2000cc
Maximum Working Pressure psi (bar)	300 (20.6)	1 hp: 200 (13.8) 2 hp: 400 (27.6)	300 (20.6)	220 (15.1)
Output at 20 CPM gpm (lpm)	4.00 (15)	5.25 (20)	8.00 (30)	10.50 (40)
Pump Manual	3A2096	3A2096	3A2096	3A2096
Motor Manual	3A2526	3A2526	3A2526	3A2526
Control Module Manual	3A2527	3A2527	3A2527	3A2527

Ordering Information

Motor Size & Controls			Motor Type		Lower Material, Fittings			Mount			Output per Cycle			
Motor Size	Basic Controls	Advanced Controls	FM	ATEX/IECEx	Hard Chrome, NPT	Hard Chrome, Tri-Clamp	MaxLife, Tri-Clamp	No Stand	Stand	Wall Mount Bracket	750 cc	1000 cc	1500 cc	2000 cc
1 hp	•		•	•	•			•			EC1110	EC2110		
1 hp	•		•	•	•				•		EC1111	EC2111		
1 hp	•		•	•	•					•	EC1112	EC2112		
1 hp		•	•	•	•			•			EC1210	EC2210		
1 hp		•	•	•	•				•		EC1211	EC2211		
1 hp		•	•	•	•					•	EC1212	EC2212		
2 hp	•		•	•	•			•				EC2310	EC3310	EC4310
2 hp	•		•	•	•				•			EC2311	EC3311	EC4311
2 hp	•		•	•	•					•		EC2312	EC3312	EC4312
2 hp		•	•	•	•			•				EC2410	EC3410	EC4410
2 hp		•	•	•	•				•			EC2411	EC3411	EC4411
2 hp		•	•	•	•					•		EC2412	EC3412	EC4412
2 hp	•		•	•		•		•				EC2320	EC3320	EC4320
2 hp	•		•	•		•			•			EC2321	EC3321	EC4321
2 hp	•		•	•		•				•		EC2322	EC3322	EC4322
2 hp		•	•	•		•		•				EC2420	EC3420	EC4420
2 hp		•	•	•		•			•			EC2421	EC3421	EC4421
2 hp		•	•	•		•				•		EC2422	EC3422	EC4422
2 hp	•		•	•			•	•				EC2330	EC3330	EC4330
2 hp	•		•	•			•		•			EC2331	EC3331	EC4331
2 hp	•		•	•			•			•		EC2332	EC3332	EC4332
2 hp		•	•	•			•	•				EC2430	EC3430	EC4430
2 hp		•	•	•			•		•			EC2431	EC3431	EC4431
2 hp		•	•	•			•			•		EC2432	EC3432	EC4432

ABOUT GRACO

PROVEN QUALITY. LEADING TECHNOLOGY.

Founded in 1926, Graco is a world leader in fluid handling systems and components. Graco products move, measure, control, dispense and apply a wide range of fluids and viscous materials used in vehicle lubrication, commercial and industrial settings.

The company's success is based on its unwavering commitment to technical excellence, world-class manufacturing and unparalleled customer service. Working closely with qualified distributors, Graco offers systems, products and technology that set the quality standard in a wide range of fluid handling solutions. Graco provides equipment for spray finishing, protective coating, paint circulation, lubrication, and dispensing sealants and adhesives, along with power application equipment for the contractor industry. Graco's ongoing investment in fluid management and control will continue to provide innovative solutions to a diverse global market.

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